AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A method for reducing radiation exposure from an imaging system adapted to provide a radiation distribution about an object cavity during a scan, the method comprising:

determining an entry location representative of a location of a hand;

operating the imaging system so as to cause the imaging system to emit radiation having a radiation intensity and an angular radiation distribution comprising a first angular radiation distribution suitable for a 360 degree image reconstruction and or a second angular radiation distribution suitable for a 180 degree image reconstruction, said first angular radiation distribution having a first average radiation distribution, said second angular radiation distribution having a second average radiation distribution, said first ~~and~~ or second angular radiation distributions varying in intensity throughout the scan, and said first ~~and~~ or second average radiation distributions being about constant throughout said scan;

controlling said radiation intensity in a manner responsive to said entry location so as to create image data; and

processing said image data so as to create processed image data;

wherein said controlling comprises:

in response to said first radiation distribution, controlling said radiation intensity such that said radiation intensity is decreased relative to said first average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controlling said radiation intensity such that said radiation intensity is increased relative to said first average radiation distribution by the

predetermined minimization amount when said gantry angular position is at about 180 degrees relative to said entry angular range; and

in response to said second radiation distribution, controlling said radiation intensity such that said radiation intensity is decreased relative to said second average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controlling said radiation intensity such that said radiation intensity is increased relative to said second average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 90 degrees relative to said entry angular range.

2. (original) The method of claim 1, wherein said determining includes determining said entry location relative to said imaging system.

3-4. (canceled)

5. (original) The method of claim 1, wherein said entry location is determined in a manner responsive to a FluoroCT scan.

6. (original) The method of claim 1, wherein the imaging system includes an object cavity and a radiation source having a gantry angular position, wherein said radiation source is rotatably associated with the imaging system so as to rotate around said object cavity and wherein said entry location includes an entry angular range.

7. (original) The method of claim 6, wherein said operating includes operating the imaging system so as to cause said radiation source to rotate around said object cavity.

8. (canceled)

9. (currently amended) The method of claim ~~8~~ 1, wherein said predetermined minimization amount is equal to said radiation intensity.

10-11. (canceled)

12. (original) The method of claim 6, wherein said operating includes operating the imaging system so as to determine a radiation absorption angular profile, wherein said radiation absorption angular profile is responsive to said gantry angular position.

13. (original) The method of claim 12, wherein said controlling includes controlling the imaging system so as to modulate said radiation intensity in a manner responsive to said radiation absorption angular profile.

14-16. (canceled)

17. (currently amended) A medium encoded with a machine-readable computer program code for reducing radiation exposure from an imaging system adapted to provide a radiation distribution about an object cavity during a scan, said medium including instructions for causing a controller to implement a method comprising:

determining an entry location representative of a location of a hand;

operating the imaging system so as to cause the imaging system to emit radiation having a radiation intensity and an angular radiation distribution comprising a first angular radiation distribution suitable for a 360 degree image reconstruction ~~and~~ or a second angular radiation distribution suitable for a 180 degree image reconstruction, said first angular radiation distribution having a first average radiation distribution, said second angular radiation distribution having a second average radiation distribution, said first and or second angular radiation distributions varying in intensity throughout the

scan, and said first and or second average radiation distributions being about constant throughout said scan;

controlling said radiation intensity in a manner responsive to said entry location so as to create image data; and

processing said image data so as to create processed image data;

wherein said controlling comprises:

in response to said first radiation distribution, controlling said radiation intensity such that said radiation intensity is decreased relative to said first average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controlling said radiation intensity such that said radiation intensity is increased relative to said first average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 180 degrees relative to said entry angular range; and

in response to said second radiation distribution, controlling said radiation intensity such that said radiation intensity is decreased relative to said second average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controlling said radiation intensity such that said radiation intensity is increased relative to said second average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 90 degrees relative to said entry angular range.

18. (original) The medium of claim 17, wherein said determining includes determining said entry location relative to said imaging system.

19-20. (canceled)

21. (original) The medium of claim 17, wherein said entry location is determined in a manner responsive to a FluoroCT scan.

22. (original) The medium of claim 17, wherein the imaging system includes an object cavity and a radiation source having a gantry angular position, wherein said radiation source is rotatably associated with the imaging system so as to rotate around said object cavity and wherein said entry location includes an entry angular range.

23. (original) The medium of claim 22, wherein said operating includes operating the imaging system so as to cause said radiation source to rotate around said object cavity.

24. (canceled)

25. (currently amended) The medium of claim ~~24~~ 17, wherein said predetermined minimization amount is equal to said radiation intensity.

26-27. (canceled)

28. (original) The medium of claim 22, wherein said operating includes operating the imaging system so as to determine a radiation absorption angular profile, wherein said radiation absorption angular profile is responsive to said gantry angular position.

29. (original) The medium of claim 28, wherein said controlling includes controlling the imaging system so as to modulate said radiation intensity in a manner responsive to said radiation absorption angular profile.

30-31. (canceled)

32. (currently amended) A method for reducing a physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:

obtaining an object to be scanned;

operating the imaging system so as to create image data;

displaying said image data on an output device; and

processing said image data using a processing device, wherein said processing device:

determines an entry location representative of a location of a physician's hand;

operates the imaging system so as to cause the imaging system to emit radiation having a radiation intensity and an angular radiation distribution comprising a first angular radiation distribution suitable for a 360 degree image reconstruction and or a second angular radiation distribution suitable for a 180 degree image reconstruction, said first angular radiation distribution having a first average radiation distribution, said second angular radiation distribution having a second average radiation distribution, said first ~~and~~ or second angular radiation distributions varying in intensity throughout the scan, and said first ~~and~~ or second average radiation distributions being about constant throughout a scan;

controls said radiation intensity in a manner responsive to said entry location so as to create image data; and

processes said image data so as to create processed image data;

wherein said processing device further:

in response to said first radiation distribution, controls said radiation intensity such that said radiation intensity is decreased relative to said first average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controls said radiation intensity such that said radiation intensity is increased relative to said first average

radiation distribution by the predetermined minimization amount when said gantry angular position is at about 180 degrees relative to said entry angular range; and

in response to said second radiation distribution, controls said radiation intensity such that said radiation intensity is decreased relative to said second average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and controls said radiation intensity such that said radiation intensity is increased relative to said second average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 90 degrees relative to said entry angular range.

33. (currently amended) A system for reducing the physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:

a gantry having an x-ray source and a radiation detector array, wherein said gantry defines a patient cavity and wherein said x-ray source and said radiation detector array are rotatingly associated with said gantry so as to be separated by said patient cavity;

a patient support structure movingly associated with said gantry so as to allow communication with said patient cavity; and

a processing device, wherein said processing device is adapted to:

determine an entry location representative of a location of a physician's hand;

operate the imaging system so as to cause the imaging system to emit radiation having a radiation intensity and an angular radiation distribution comprising a first angular radiation distribution suitable for a 360 degree image reconstruction ~~and~~ or a second angular radiation distribution suitable for a 180 degree image reconstruction, said first angular radiation distribution having a first average radiation distribution, said second angular radiation distribution having a second average radiation

distribution, said first and or second angular radiation distributions varying in intensity throughout the scan, and said first ~~and~~ or second average radiation distributions being about constant throughout a scan;

control said radiation intensity in a manner responsive to said entry location so as to create image data; and

process said image data so as to create processed image data;

wherein said processing device is further adapted to:

in response to said first radiation distribution, control said radiation intensity such that said radiation intensity is decreased relative to said first average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and control said radiation intensity such that said radiation intensity is increased relative to said first average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 180 degrees relative to said entry angular range; and

in response to said second radiation distribution, control said radiation intensity such that said radiation intensity is decreased relative to said second average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and control said radiation intensity such that said radiation intensity is increased relative to said second average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 90 degrees relative to said entry angular range.

34. (original) The system of claim 33, wherein the imaging system is a computed tomography imaging system.

35. (currently amended) A system for reducing the physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:

an imaging system;

a patient support structure movingly associated with said imaging system so as to allow communication between said imaging system and a patient, wherein said imaging system generates image data responsive to said patient; and

a processing device, wherein said processing device is adapted to:

determine an entry location representative of a location of a physician's hand;

operate the imaging system so as to cause the imaging system to emit radiation having a radiation intensity and an angular radiation distribution comprising a first angular radiation distribution suitable for a 360 degree image reconstruction and or a second angular radiation distribution suitable for a 180 degree image reconstruction, said first angular radiation distribution having a first average radiation distribution, said second angular radiation distribution having a second average radiation distribution, said first and or second angular radiation distributions varying in intensity throughout the scan, and said first ~~and~~ or second average radiation distributions being about constant throughout a scan;

control said radiation intensity in a manner responsive to said entry location so as to create image data; and

process said image data so as to create processed image data;

wherein said processing device is further adapted to:

in response to said first radiation distribution, control said radiation intensity such that said radiation intensity is decreased relative to said first average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and control said radiation intensity such that said radiation intensity is increased relative to said first average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 180 degrees relative to said entry angular range; and

in response to said second radiation distribution, control said radiation intensity such that said radiation intensity is decreased relative to said second average radiation distribution by a predetermined minimization amount when said gantry angular position is within said entry angular range, and control said radiation intensity such that said radiation intensity is increased relative to said second average radiation distribution by the predetermined minimization amount when said gantry angular position is at about 90 degrees relative to said entry angular range.

36. (original) The system of claim 35, wherein the imaging system is a computed tomography imaging system.